

SOME NEW AMERICAN TACHINIDAE (DIPTERA).¹

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In the following pages I present descriptions of several new species of North American Tachinidae and in some cases keys for the separation of the species. The determination of the members of this family is extremely difficult since no reliable key to the genera is available. In this paper I recognize two Palaearctic genera not previously recorded from North America. A further comparison of the forms occurring in America and Europe will undoubtedly result in the recognition of additional genera common to the two regions.

***Gymnosoma occidentale* n. sp.**

Allied to *fuliginosa* but smaller, the genital claspers curved downwards at apex, not straight.

Length, 5 to 6 mm. *Male*. Face silvery yellowish white; oral bristle weak, a few bristly hairs near it. Front bright brassy yellow; the median vitta shining brownish red, in some lights brassy above, a little widened below; reaching quite to the antennae; its margin with about eight black, fine bristles; a second row of shorter, finer bristly hairs toward the orbits. Occiput white; broadly shining black above; white haired on white portion; with a row of black cilia above. Cheeks white pilose. Antennae reddish, first joint brownish above basally; third brown, its base reddish; third joint as long as half the width of the front at base of antennae, its sides parallel, its apex rounded, not acute.

Mesonotum before the suture golden yellow pollinose; similarly colored pollen on the anterior half behind the suture, its posterior margin convex; on either side of the middle line, with a narrow shining stripe, these slightly divergent posteriorly; on either side of these with an oval shining spot, not passing the suture. Posterior of mesonotum shining black. Pleura yellowish white pollinose. Pile wholly black; bristles on sides of mesonotum not strong. Scutellum shining black, its apex narrowly golden pollinose.

Legs entirely black, shining, black pilose. Wings greyish hyaline, their bases yellow. First posterior cell less angulate posteriorly than in *fuliginosa*. Squamae whitish yellow.

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Abdomen shining reddish yellow; the first segment wholly, and a small roundish spot on the apex of the second, third and fourth segments black, the first connected with the black of the first segment by nearly the width of the spot.

Holotype: ♂, Vernon, B. C., July 28, 1920 (M. H. Ruhmann), No. 576 in the Canadian National Collection, Ottawa. *Paratypes*: ♂, same data; ♂, Vernon, July 23, 1920 (N. L. Cutler); ♂, Jordan, Ont., August 8, 1914 (W. A. Ross); ♂, Seton Lake, Lillooet B. C., June 1, 1926 (J. McDunnough).

***Cryptomeigenia flavibasis* n. sp.**

Allied to *C. muscoides* Curran, but the female has the sheath of the ovipositor undeveloped and the male has a narrower front. Length, 7-7.5 mm.

Female.—Front two-thirds as wide as eye; about nine frontals, the lower three below base of antennae, the upper two reclinate, the next to the upper strong; two pairs of orbitals, the anterior strong one situated at the upper third of the front; ocellars strong; outer verticals one-third as long as verticals, weak; occipital cilia extending to lower third of eyes, these continued as coarse hairs to the cheeks, a second row of black bristles behind them and a third on the upper fifth of the head; occipital pile pale yellowish; hair of cheeks mostly fine and yellow but black across the middle; parafacials with sparse short black or yellow hairs. Cheeks five-twelfths the eye height; parafacials one-third wider than third antennal segment at middle, half as wide as distance between vibrissae. Palpi pale yellowish with black hairs; antennae reddish, the third segment largely brown, whitish pollinose, third segment about two and one-half times as long as second, slightly tapering; arista black, thickened and reddish on basal fifth. The head is densely clothed with gray pollen which has a golden tint on the parafrontals and occiput above.

Thorax and scutellum thickly gray pollinose, on the dorsum with yellow tinge, the vittae moderately conspicuous. Acrosticals and dorsocentrals 3-3, sternopleurals 2-1, three pairs of strong marginal scutellars, the apical pair somewhat divergent, the apicals sometimes represented by one or two hairs; a weak pair of discals. Hair of mesonotum and mesopleura black, on the pleura yellow.

Legs and coxae rusty reddish, thinly pale pollinose, black haired; tarsi black; coxae with pale pile and black bristles.

Wings with grayish tinge, the base, continued along the costa to the middle, yellowish. Squamae greyish hyaline, the border yellowish. Halteres yellow.

Abdomen densely yellowish gray or grayish yellow pollinose, with weak tessellation, the sides of the first two segments more or less broadly reddish yellow in ground color. First and second segment with one pair of strong marginals, the second with two weaker marginals connecting the median and lateral pairs and with a pair of strong discals; third with similar bristling but the marginals stronger; fourth with three irregular rows of bristles. Genitalia red; the sheath subtriangular, very small, never protruded.

Male.—Front two-fifths as wide as eye, the parafrontals about as wide as the wine-red frontal vitta; about twelve pairs of rather fine frontals, the three upper pair reclinate; outer verticals absent. Thorax more gray, hair of scutellum fairly long. Femora black except the immediate base, apical fourth below and the apex. Abdomen cinereous pollinose, the sides of the first three segments reddish yellow with broad black apices; second segment with two pairs of discals and without the connecting marginals.

Holotype: ♀, Meredoria, Ill., May 28, 1917; *Allotype*: ♂, same locality, May 29, 1917; *paratypes*: 2 ♀, same locality, May 28, 29, 1917; ♂, White Heath, June 24, 1916; ♀, Savanna, Ill., June 13, 1917. Types in collection of Illinois Biological Survey; paratype, No. 2226 in the Canadian National Collection, Ottawa.

PHYLLOMYA Desvoidy.

Myodaires, 213, 1830.

Neadmontia Townsend, Proc. Ent. Soc. Wash., xiv, 164, 1912.

The synonymy of *Neadmontia* Townsend is quite evident by comparison of the Nearctic species referable to *Phyllomya*. *Phyllomya volvulus* Fabr. has the apical cell open, *polita* has it less widely open, while *limata* Coq. has it closed almost in the margin. Other characters are quite the same. In the species described below the apical cell is moderately widely open. The species before me are separable as follows:

1. Apical cell open 2
Apical cell closed just before the costal margin . . *limata* Coq.
2. First abdominal segment without discals 3
First abdominal segment with pair of discals and usually four marginals (Europe) *volvulus* Fabr.
3. First two antennal segments reddish yellow, the third segment narrower than parafacial, slightly tapering *polita* Coq.
Antennae wholly black, third segment wider than parafacial, broad, not tapering *fuscicosta* n. sp.

Phyllomya limata Coquillett.

Admontia limata Coq., Proc. U. S. N. M., xxv, 105, 190
(Idaho).

Aweme, Man., July 8, 1924 (N. Criddle).

Phyllomya polita Coquillett.

Admontia polita Coq., Can. Ent., xxx, 234, 1898 (N. Y., Fla.).
Bowmanville, Ont., August 1, 1913 (W. A. Ross).

Phyllomya fuscicosta n. sp.

Shining black, posterior wing veins basally and the squamae, yellowish. Length 8 mm.

Male.—Head silvery pollinose, the front above and the occiput except the orbits bare or nearly so. Front five-eighths as wide as either eye, the blackish frontal vitta slightly wider than parafrontal; ten to twelve pairs of frontals, the upper pair divergent, the lower pair below base of antennae; two or three pairs of orbitals; ocellars long; outer verticals but little longer than the long occipital cilia. Hair black, white on the occiput below the neck. Cheeks slightly over one-third as wide as eye-height; parafacials wide, with two rows of bristly hairs towards the inner edge, the outer row weaker. Palpi black; arista thickened on basal fourth, long pubescent, the penultimate segment one and one-half as long as wide.

Humeri conspicuously whitish pollinose, the pleura thinly so, the mesonotum with thin brownish gray pollen in some views. Acrosticals 2-2; dorsocentrals 3-3; 2 sublaterals; 3 intra-alars; sternopleurals 2-1, three pairs of marginal scutellars, the apical pair cruciate.

Pulvilli brownish gray, moderately long; middle tibiae with three anterodorsal bristles.

Wings with brownish tinge, broadly darker in front, paler behind; third vein with three basal bristles; posterior cross-vein oblique, sinuous, joining penultimate section of fourth vein at its apical third.

Basal fourth of second to fourth abdominal segments rather indistinctly whitish pollinose. First abdominal segment with a row of marginals, the median pair erect, the others sub-appressed; second to fourth segment each with row of marginals, the second and third each with pair of discals, the fourth with a row and scattered ones towards the sides.

Holotype: ♂, Seton Lake, Lillooet, B. C., May 28, 1926 (J. McDunnough); No. 2331 in the Canadian National Collection, Ottawa.

***Eipogona americana* n. sp.**

The genus *Eipogona* Rond. (*Eupogona* auct.) has not been previously recorded from North America. The known species have much the facies of *Zenillia cheloniae* but are smaller and wholly pruinose, while the parafacials bear short, bristly hairs; the eyes are short and sparsely hairy, posterior tibiae ciliate, intermediate abdominal segments without discs, etc.

In Coquillett's key (1897), traces to *Admontia* while in Williston's Manual (1908) traces to *Admontia* or *Cryptomeigenia* but the profile of the head is as in *Zenillia*. Length, 6.5 to 7 mm.

Male.—Black, grayish ochreous pollinose, the pleura gray; face and occiput rather silvery white; mesonotal black vittae conspicuous; depression of first segment and apical half of fourth less thickly pollinose.

Front practically as wide as eye, with a row of frontal-like orbitals, ocellars and outer verticals strong, postocellars well developed; a row of short black bristles on either side behind the occipital cilia; frontal vitta dark rusty red, in front hardly three-fourths as wide as parafrontals, forked Y-shaped above where the parafrontals are strongly narrowed; frontal hair black; occipital pile whitish, not abundant. Cheeks about one-seventh eye-height, black haired. Vibrissae level with oral margin, two or three bristles above them; parafacials one-fourth as wide as facial depression with sparse bristly short black hairs, narrowed below. Antennae black, reaching the lowest fifth of face, third segment three times as long as second, rather broad, its apex sub-truncate. Arista tapering from near base, rather thick to beyond the middle. In profile the head is only a little shorter below than at antennae.

Acrosticals and dorso-centrals, 3-3; sternopleurals, 4; four pairs of marginal scutellars, the apical pair weaker and decussate, almost horizontal. Propleura bare; infra-squamal spinules absent.

Wings hyaline, slightly yellowish in front on basal third. Third vein with two or three basal bristles; bend of fourth vein rather sharp; apical cell open moderately before apex of wing, posterior crossvein curved outwards, doubly curved, joining the fourth vein at the apical third of its penultimate section. Squamae waxy white, the border tinged with yellow; halteres yellow.

Claws and the luteous pulvilli a little elongate; middle tibiae with a strong median antero-dorsal bristle and a weaker one preceding it.

On the abdomen, in certain lights, there is an indication of a darker median line, while the extreme apex of each segment is darker. From posterior view the broad apex of the abdomen appears shining brown. First segment with a pair of weak marginals; second with a pair of short, robust ones; third and fourth with marginal row, the hair of the last two segments and middle of the second bristly, coarse, erect. The venter appears more brown.

Female.—Two pairs of proclinate orbitals, the secondary frontal row absent except a single bristle in front. Head a little wider, the eyes and front of the same relative widths. Otherwise similar to ♂.

Holotype: ♂, Sioux City, Iowa (C. N. Ainslie); No. 2237 in the Canadian National Collection, Ottawa. *Allotype*: ♀, same data. *Paratypes*: 2 ♀, same data.

Host: *Papilio asterias* (Lepid.). The host of *E. setifacies* Rondani, the genotype, is also a *Papilio, machaon* L.

This species differs from *setifacies* as follows: there is no distinct black stripe on the abdomen, the parafacials are wider and bear somewhat weaker bristly hairs, the hair of the eyes is not quite as evident, the antennae are longer, etc. The genus is very close to *Hylotomyia* Tns. and the two may prove to be the same. The differences are: presence of the row of orbitals in the ♂ and absence of true discals on intermediate abdominal segments in *Eipogona*. In *Hylotomyia buckelli* Curran there is a row of strong, short hairs in the place where the orbitals occur in *E. americana*, indicating the very close relationship of the two.

EULASIONA Townsend.

1. First two antennal segments reddish *catskillensis* West.
Antennae wholly black 2
2. Third wing vein with several bristles basally 3
Third vein with a single bristle 4
3. Tibiae deep reddish *tibialis* n. sp.
Legs wholly black *neglecta* West.
4. Abdomen shining black with rather narrow, interrupted white
pollinose basal segmental fasciae *nigra* Curran.
Abdomen with very broad bases of segments pale pollinose, in
some lights mostly pale *comstocki* Tns.

***Eulasiona tibialis* n. sp.**

Length, 6.5 mm. *Female*. Head thickly grey pollinose, the front and orbits slightly tinged with dark yellowish; frontal vitta with reddish tinge as wide or wider than parafrontal; front four-fifths as wide as eye; two strong frontals and four weaker ones, the upper pair divergent; ocellars weak. Palpi brownish red; antennae black; arista strongly thickened on basal third.

Thorax black, moderately grey pollinose, the four vittae rather narrow, the lateral one appearing broad in some views. Two pairs of anterior acrosticals; posterior sub-lateral absent; three posterior dorsocentrals and acrosticals; two sternopleurals; scutellum grey pollinose, with three strong marginals, the apical pair decussate; no small apicals.

Legs black; tibiae dark reddish; all the tarsi stout; middle tibiae with one strong and three moderately strong antero-dorsal bristles.

Wings conspicuously tinged with grey. Squamae white; halteres brownish red. No infra-squamal spinules.

Abdomen black, the first segment moderately greyish brown pollinose, the others greyish white pollinose, the second with a broad, laterally narrowed, sub-interrupted black apical band, the band on the third segment less than half the width of the segmental length and broadly interrupted, the fourth segment only a little shining apically. First segment with one pair of marginals, the second and third with one pair of median discals, the latter with two additional pairs towards the sides; second with a pair of median marginals and two pairs towards the sides, the third with a complete row of marginals; fourth segment with two transverse rows of discals and a row of marginals.

Holotype: ♀, Aylmer, Que., May 24, 1924 (Curran); No. 2057 in the Canadian National Collection, Ottawa.

The specimen was determined as a new species by Dr. Aldrich. There are several differences between this and the genotype: there are only two anterior acrosticals, the third wing vein bears several bristles basally and the infra-squamal setulae are absent. Possibly it should be placed in a different genus and *E. neglecta* West may also show the same characters.

BELVOSIA.

1. Abdomen yellowish with black median vitta, the first segment and apex of third black, squamae white (P. R.).

luteola Coq.

Abdomen not yellowish on the second and third segments, or if so, without median vitta 2

2. Thorax opaque black in front of the suture, shining black behind; apical two abdominal segments deep orange or brick-red (San Dom.) *vanderwulpi* Will.
Mesonotum wholly shining black or more or less grey pruinose 3
3. Abdomen iron-rust yellow, the yellow predominating on first two segments, the iron-rust on third and fourth; first segment brownish beneath scutellum; squamae fuscous (Jamaica) *ferruginosa* Tns.
First two abdominal segments black, at most red on the sides, broadly shining behind 4
4. Fourth abdominal segment whitish pruinose, third not as densely pollinose as to conceal the ground color (Brazil, Mexico) *leucopyga* Wulp.
Fourth abdominal segment more or less yellow pollinose or if whitish the basal half or more of the third segment is similarly clothed or the pollen does not completely conceal the ground color 5
5. The fourth abdominal segment is densely pollinose and contrasts sharply with the others 6
The third and fourth abdominal segments are densely pollinose or there is no sharp contrast between the third and fourth, the pollen being diffuse and thin posteriorly on both 10
6. Abdomen shining blue-black, the fourth segment yellow (Brazil?) *analis* Macq.
Abdomen either dark reddish on the broad sides, the apical segment reddish or the bases of segments two and three distinctly, broadly pollinose 7
7. Abdomen without pollen on first three segments, broadly dull reddish on the sides *bella* G.-T.
Abdomen with second and third segments broadly pollinose basally or wholly black 8
8. Abdomen black, the fourth segment reddish (Arg., Mexico?) *weyenberghiana* Wulp.
Abdomen with the second and third segments broadly pollinose basally; squamae wholly white 9
9. Pile of parafacials above and of the cheeks very fine, pale yellow *antilliana* n. sp.
Pile of parafacials above and of cheeks coarse, black.
unifasciata Desv.
10. Frontal vitta yellow; sides of face at narrowest part one-third as wide as median depression; bases of three segments yellowish-grey pollinose (Florida) *slossonae* Coq.
Frontal vitta normally brownish red to black, the parafacials nearly or quite half as wide as depression; second segment usually without pollen 11

11. First abdominal segment without median marginals; second segment with narrow basal white fascia; squamae of ♀ white or yellowish (U. S., W. I., Br. Guiana).
bicincta Desv.
First abdominal segment with marginals 12
12. Lower lobe of squamae of ♂ ♀ white; third antennal segment of ♀ three-fifths as long, of ♂ half as long, as third; length 13.5 mm. *canadensis* n. sp.
Lower lobe of squamae of both sexes brownish, or if white the third antennal segment of ♀ is at least twice as long as the second and in the ♂ over two and a half times as long. Length over 15 mm. 13
13. Mesonotum, except the humeri, without grey pollen; squamae of both sexes brownish (Man., Sask.)... *splendens* n. sp.
Mesonotum conspicuously greyish pollinose 14
14. Lower lobe of squamae of ♀ whitish; only the apical fourth of third abdominal segment blackish (U. S., Miss.,! W. I.!) *bifasciata* F.
Squamae dark in both sexes; apical half of third segment black, the whitish yellow fasciae narrowly interrupted (Brazil) *esuriens* F.

***Belvosia canadensis* n. sp.**

Related to *B. bifasciata* F. but the lower lobe of the squamae is white in both sexes and the second antennal segment of the ♀ is three-fifths as long as the third. Brownish black or black, basal antennal segments and scutellum brownish red. Apical two abdominal segments densely yellowish pollinose except their tips; face scarcely receding. Length 12.5 to 13.5 mm.

Male.—Front at vertex two-ninths wider than eye, broadened anteriorly, pale reddish brown, thinly pollinose, the frontal vitta narrowest in front of ocelli, scarcely differentiated from the parafrontals in color, nowhere as wide as either parafrontal. Outside the weak frontals are two irregular rows of bristles, only the three lower frontals strong; hair of front fairly abundant. Outer vertical bristles strong, divergent; the occipital cilia extend to the cheeks which bear sparse, fairly fine black hair; occipital pile white, abundant; cheeks hardly half as wide as eye-height; parafacials two-thirds as wide as distance between the vibrissae; vibrissae half the length of second antennal segment above the oral margin; facial ridges with five to seven bristles on lower half to three-fourths and a row of hairs outside them. Palpi broad, gradually widening to their apex which is convexly

oblique. Antennae black, the second segment, base of third and most of the arista brownish red; third antennal segment twice as long as second, its sides almost parallel, the apex truncate with sharply rounded corners; penultimate segment of arista about twice as long as wide. Head silvery white pollinose.

Thorax blackish in front, the sides behind and posterior margin reddish brown; rather thickly cinereous pollinose in front, the pollen becoming obsolete behind, the vittae poorly marked. Dorsocentrals 2 or 3-4; sternopleurals 3 or 4; scutellum with four pairs of horizontal marginal bristles.

Legs blackish; pulvilli yellow, rather small.

Wings brownish; squamae white, the upper lobe brownish.

Abdomen blackish, the apical two segments so densely yellowish pollinose as to conceal the ground color except on their apices. First and second segment each with a pair of short marginals, the third and fourth with row of rather short, stout marginals, the third with recumbent hair, the fourth with erect, short, sparse fine hair scattered over almost the whole surface.

Female.—Front slightly wider; brownish; the second antennal segment three-fifths as long as third.

Holotype: ♂, Piapot Reserve, Saskatchewan, July 4, 1908 (Jas. Fletcher); No. 2291 in the Canadian National Collection, Ottawa.

Allotype: ♀, Calgary, Alta., September 2, 1922. *Paratypes*: ♂, Aweme, Man., June 25, 1919 (N. Criddle); ♂, Calgary, Alta., September 2, 1922; 5 ♀, Douglas Co., Kans., May 13 and 19, 1923 (W. J. Brown); ♀, Payne Co., Oklahoma, April 12, 1925 (W. J. Brown).

***Belvosia splendens* n. sp.**

Blackish or castaneous, the apical two abdominal segments densely yellow pollinose except their apices; squamae brown in both sexes; face rather strongly retreating; related to *bifasciata* F. Length 15 to 17 mm.

Male.—Front a little more than one-fourth wider than either eye, shining black or castaneous, the parafrontals obscurely, transversely rugose on their inner half, the frontal vitta one-third as wide as front, opaque, with slight whitish reflections. Parafrontals with a row of bristles outside the frontals, which are fairly strong, the hair rather long, some of it bristle-like. Head silvery white pollinose. Outer verticals strong; occipital cilia extending to the cheeks which bear rather fine black hair; occipital pile whitish; cheeks

three-sevenths as wide as eye-height; parafacials two-thirds as wide as distance between the vibrissae. Facial ridges with 10-12 bristles on lower three-fourths, and sometimes occasional ones outside the row among the sparse, coarse hairs. Palpi reddish, becoming brown basally, robust; antennae black, the incisures and most of the arista brownish red; third segment more than twice as long as the second; penultimate segment of arista twice as long as wide. Vibrissae situated one-third the length of second antennal segment above oral margin.

Thorax shining, only the humeri weakly pollinose. Dorsocentrals 3-4 or 5; sternopleurals 4 or 5; marginal scutellars horizontal, 4 or 5 pairs. Scutellum sometimes obscure reddish apically.

Legs black; pulvilli pale yellow, fairly large; claws bright yellow with black tips.

Wings brown; squamae and halteres brown, the latter reddish basally.

Abdomen black, the apical segments densely pale ochreous pollinose, the apex of the third broadly, of the fourth narrowly, black. First and second segments each with a pair of marginals, the third and fourth with marginal row of strong bristles. Abdominal hair sub-appressed except on the fourth segment where it is fine and sub-erect and does not extend nearly to the base of the segment.

Female.—Head black in ground color; third antennal segment very little more than twice as long as second; penultimate segment of arista one and one-half as long as wide.

Holotype: ♂, Saskatchewan; No. 2292 in the Canadian National Collection, Ottawa. *Allotype*: ♀, Baldur, Man., July 11, 1925 (R. D. Bird). *Paratypes*: ♂, Aweme, Man., 1914 (A. Criddle); ♂, South Arm, Lost Mountain Lake, Sask., June 13, 1920 (C. H. Young); ♀, Aweme, Man., July 9, 1925 (E. Criddle); ♀, Aweme, Man., July 3, 1922 (S. Criddle).

Belvoisia bifasciata F.

Musca bifasciata F., Syst. Ent., 777, 1775.

Thirty specimens from Mississippi, Texas, Pennsylvania, Illinois and Florida are referred to this species. The face is hardly as receding as in *splendens* but much more so than the *canadensis* in which it is scarcely retreating. The squamae are normally brown but in some specimens of both sexes the lower lobe may be almost whitish, in which case it is separable from *canadensis* by its much larger size, receding face, stronger bristles on first abdominal segment and longer third antennal segment.